

36794

S/137/62/000/004/053/201

A052/A101

14.7500

AUTHORS: Kokorish, Ye. Yu., Sheftal', N. N.

TITLE: On the problem of growth of dislocationless germanium single crystals

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 48, abstract 40320
(V. sb. "Rost kristallov. T. 3". Moscow, AN SSSR, 1961, 388 - 394.
Discuss., 501 - 502)

TEXT: The effect of some parameters of growing by Chokhral'skiy method on the formation of dislocations in Ge single crystals was studied. As initial material polycrystalline Ge ingots, purified by zone melting, with specific resistance of $> 30 \text{ ohm}\cdot\text{cm}$ were used. The diameter of single crystals varied from 6 to 30 mm. The rate of extraction was constant or changed according to the set program from 4 to 0.5 mm/min. The rotating speed of the seed crystal was 50 - 100 rpm, the direction of growing was [111]. The density of dislocations was determined by pickling pits which were detected in the [111] plane, after pickling in potassium ferricyanide solution. It is shown that the density of dislocations in the speed range of 0.5 - 3 mm/min does not depend practically on the rate of extraction and is determined mainly by the cooling conditions of the crystal. At

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rates of extraction of $> 4 \text{ mm/min}$ a noticeable increase in the density of dislocations is observed. The effect of the diameter on the density of dislocations was studied at a rate of extraction of 1 mm/min . It is established that with the increase of dimensions of the crystal the density of dislocations increases which is conditioned by considerable difficulties connected with the cooling of large-size crystals. No noticeable effect of Sb, Bi, Ga and In admixtures as well as of a different orientation of seed crystals in [111], [110] and [100] directions on the density of dislocations in the grown crystals was detected. The main part in the formation of dislocations in Ge single crystals play the cooling conditions of the growing crystal from the crystallization temperature to the indoor temperature, and also the perfection degree of the seed crystal. To eliminate considerable temperature gradients in the process of extraction, it is necessary to heat additionally the growing crystal and to cool down very slowly. When a special graphite crucible with a screen was used, the value of the axial temperature gradient on the surface of the crystal was $20 - 40 \text{ degr/cm}$ with the resulting decrease of the density of dislocations to 10 cm^{-2} and lower. Dislocationless single crystals were produced at extraction with a seed crystal having no dislocations or with a density lower than 10^3 cm^{-2} . The end of the seed crystal immersed in the smelt had a cone-shaped form. At the beginning a thin crystal was grown. High- and

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low-resistance dislocationless single crystals weighing up to 40 g were produced. Dislocationless crystals as well as crystals with a small density of dislocations had usually higher values of diffusion length than crystals with a density of dislocations of 10^{15} cm^{-2} and more. Ge single crystals with a small density of dislocations were produced at zone melting with the temperature gradient of 15°C after the fused zone at its rate of displacement of 2 mm/min. It is established that the dislocations in Ge single crystal arise mainly in the process of its cooling from high temperatures to $< 500^\circ\text{C}$ and as a partial spreading from the seed crystal.

B. Turovskiy

[Abstracter's note: Complete translation]

Card 3/3

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

OZOLS, K.K.; KOKORISH, Ye.Iu.

Synthesis of gallium arsenide single crystals. Rost krist. 4:
(MIRA 17:8)
181-202 '64.

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

LACKOVA, E.; NOVAKOVA, M.; KOKORNA, M.; SVEJCAR, J.

Our experience with the measurement of children by means of
Lelong's method. Cesk.pediat. 15 no.8:669-677 Ag '60.

1. I detska klinika v Praze, prednosta prof. MUDr. J.Svejcar
(ANTHROPOOMETRY)
(GROWTH)

KOKORNA, Vera, dr.

Values of water retention and of ashes in various types of peat
in various localities. Fysiat.vest., Praha 33 no.6:207-216 Dec 55.

L. Významy vody i popelu
(PEAT,
water retention & ashes)

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

KOKORCHVILLI, G., inzh.

Equipment for testing air bottles, Avt. transp. 43 no.8:42-43
Ag 165. (MIRA 18:9)

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

1. KOKOROV, V. I., Eng.

2. USSR (600)

4. Lumbering

7. Self-releasing choker for stacking lumber with winches. Iss. prom. 12 no. 12 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

KOKORYSHKIN, V.N.

Heat treatment of disk springs. Mashinostroitel' no.12:26 P '63.
(MIRA 16:3)
(Springs (Mechanism)) (Steel—Heat treatment)

ZHAVRID, V.M.; MATVEYKOV, G.P.; KOKOSH, A.A.

Changes in the cardiovascular system in chronic tonsillitis. Zdrav. Bel. 8 no.6:10-12 Je'62. (MIRA 16:8)

1. Iz kafedry gospital'noy terapii (zav. - prof. G.Kh. Dovgiallo) Minskogo meditsinskogo instituta.
(TONSILS—DISEASE) (CARDIOVASCULAR SYSTEM—DISEASES)

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

KOKOSH, G.D.

Photographic recording of balance swings. Trudy VNIIM no.2:25-
30 '47. (MIRA 12x1)
(Balance) (Photography--Scientific applications)

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

KOKOSH, G.D.; MOROZOVA, I.N.

Weights made of quartz. Trudy VNIIM no. 1917-12 '52. (MIRA 11:6)
(Weights and measures) (Quartz)

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

KOKOSH, G.D.; SMIRNOVA, N.A.

Applying the method of torsion pendulum in investigating balance
arms of precision balances. Trudy VNIIM no.19:21-30 '52.
(Balance) (MIRA 11:6)

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

KOKOSH, G. D.

"Investigation of Oscillations of Precision Balances," Dr Tech
Sci, All-Union Sci Res Inst of Metrology; Leningrad Ship-building
Inst, Leningrad, 1954. (RZhTekh, Sep 54)

SO: Sum 432, 29 Mar 55

KOKOSH, G.D., kand. fiz.-mat. nauk.

Laws of changes of resistance forces and energy dissipation caused
by the swinging of precision balances. Trudy VNIIM no.27:5-22 '55.
(Balance) (VNIIM 11:6)

KOKOSH, G.D.

Selecting calculation formulas for the determination of swing
centers of balance beams. Trudy VNIIIM no.27t55-59 '55. (MIRA 11:6)
(Balance)

HUDO, N.M., kand. tekhn. nauk; IPPITS, M.D., kand. tekhn. nauk;
KOKOSH, G.D., kand. fiziko-matem. nauk.

[Instruction 58-54 for checking hydrostatic steelyard-type balances] Instruktsiya 58-54 po poverke gidrostaticheskikh vesov bezmennogo tipa. Izd. ofitsial'noe. Moskva, 1956. 15 p.
(MIRA 14:5)

1. Russie (1923- U.S.S.R.) Komitet standartov, mer i izmeritel'nykh priborov.
(Balance--Testing)

KOKOSH, G.D., kand.fiziko-matem.nauk; IZMAYLOV, S.V., kand.fiz.-mat.nauk,

nauchnyy red.; VLADIMIRSKIY, D.M., red.izd-va; GURDZHIYEV, A.M.,
tekhn.red.

[Atomnaiia energiia v prirode. Leningrad, Ob-vo po rasprostraneniu
polit.i nauchn.znanii RSR, Leningr.otd-nie, 1957. 37 p. (MIRA 11:1)
(Atomic energy)]

KOKOSH, G.D.

RUDO, Nikolay Mikhaylovich, kand.tekhn.nauk; GULIN, G.A., inzh.,
retsensent; KOKOSH, G.D., kand. fiz.-mat.nauk, red.; GOTMAN, Ye.K.,
red.izd-va; SOKOLOVA, L.V., tekhn.red.

[Scales; theory, operation, regulation and checking] Vesy;
teoriia, ustroistvo, regulirovka i poverka. Moskva, Gos.nauchno-
tekhn.izd-vo mashinostroit.lit-ry, 1957. 350 p. (MIRA 11:1)
(Scales (Weighing instruments))

KOKOON, G.D.

5(1) 6(2) 5(1) 6(2)

PHASE I BOOK EXPERTISE 307/2025

Vesnoveny nauchno-issledovatel'skiy institut po radiofizike i radioelektronike SSSR
D.I. Mendeleeva

Nauchny nauchno-issledovatel'skiy institut No. 2 (Scientific Research Institute of Articles, Fr. D.) Moscow,
Research Abstracts; Collection of Articles, Fr. D., Moscow,
Statistical, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Soviet standard, part 1.
Imperial, V.D. Priborov.

No. 1. S.V. Reshetina; Tech. Ed.: N.A. Kudr'yev.

NOTE: These reports are intended for scientists, researchers, and engineers engaged in developing, standardizing, metrology, and testing instruments.

CONTENTS: The volume contains 120 reports on standards of measure-
ment and control. The reports were prepared by scientists in af-
filiated and measuring instruments under the USSR Council of
Ministers, and the participating scientific areas are: MIREI -
Institutes, and measuring instruments under the USSR Council of
Ministers, and the participating scientific areas are: MIREI -
Vsesoyuzny nauchno-issledovatel'skiy metrologicheskii in-t D.S.
Mendeleeva (All-Union Scientific Research Institute of Me-
trolgy), Izhevsk (Udmurtia); Vsesoyuzny nauchno-issledovatel'skiy
institute (All-Union Scientific Research Institute of Metrology and
Instruments), VNIIL - Vsesoyuzny nauchno-issledovatel'skiy in-
stitut Kvantitativno-tekhnicheskikh issledovanii po izmerenii-
(All-Union Scientific Research Institute of the Compre-
hension of Standards, Measures, and Measurement Instruments), created
from MIREP - Rossiyskoye Gosudarstvennoye Institut, part 2.
Imperial, V.D. Priborov (Ural'sk State Institute of Measures
and Measuring Instruments), October 1, 1955; VNIIT -
Vsesoyuzny nauchno-issledovatel'skiy nauchno-tekhnicheskii
uchebnyi i nauchno-issledovatel'skiy (All-Union Scientific
Research Institute of Physico-technical and Radio-electronic
Measurements) in Moscow; NIIKOMP - Kirov'skoye gosudarstvennoye
institut, part 1; Imperial, V.D. Priborov (Kazan' State Institute
of Measures and Measuring Instruments); and MIREP - Novosel's-
kogo gosudarstvennoye institut, part 2. Imperial, V.D. Priborov
(Novosel'sk State Institute of Measures and Measuring Instru-
ments). So far no references are mentioned. There are no references
to optical dividing heads.

Mass and Density Measurements (Radio, E.M. Soltsev, Candidate of
Technical Sciences)

Safonova, N.A. (VNIIM). Skuplifying Committee for Securing National
Instruments of Equal-Error Precision Balances

Korobov, I.N. (VNIIM). Experimental Study of Reasons for Vari-
ations in the Readings of Analytical Balances

Kotov, G.D. (VNIIM). Designing Model Balances of the First
Category

Bogolyubov, N.M. (VNIIM). New VNIIM Balances for Weighing Standards
of Weight

Safonova, N.A. (VNIIM). Developing Models and Means of Checking
Balances with a Load Range of 1 kg or Less

Chirkov, A.I., and G.A. Gol'dukhova. (VNIIM). G.A. Gorbachev, V.
Card 6/77

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

Kokosh, G. V.

Category: USSR / Physical Chemistry.

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimii, No 9, 1957, 29930

Author : Shchukarev S. A., Morozova M. P., Kan Kho-Yn, Kokosh G. V.

Inst : not given

Title : Strontium-Bismuth System

Orig Pub: Zh. obshch. khimii, 1956, 26, No 6, 1525-1531

Abstract: By methods of physico-chemical analysis a study has been made of the Sr - Bi system. On the basis of thermal analysis data and distribution of averaged gram-atomic volumes, it was ascertained that there exist the congruent fusible compounds SrBi_3 , Sr_2Bi_3 and Sr_3Bi and the incongruent fusible SrBi . Results of microscopic investigation confirm the type of the diagram of state derived by means of the first two methods. From values of thermal effect of interaction of SrBi , Sr_2Bi_3 and Sr_3Bi with dilute HCl (for description of the calorimetric procedure see RZhKhim, 1955, 34012) a determination was made of enthalpy

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-45-

Leningrad. Univ.

Category: USSR / Physical Chemistry.

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimii, No 9, 1957, 29930

of their formation, ΔH , which was found to be, respectively, of -43.0 ± 2.7 ; -126.8 ± 2.6 and -74.8 ± 1.2 kcal/g-formula. A comparison is presented of the ΔH values of some binary compounds of elements of principal subgroup of group V of the periodic system with alkaline-earth metals.

Card : 2/2

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CIA-RDP86-00513R000723710011-9

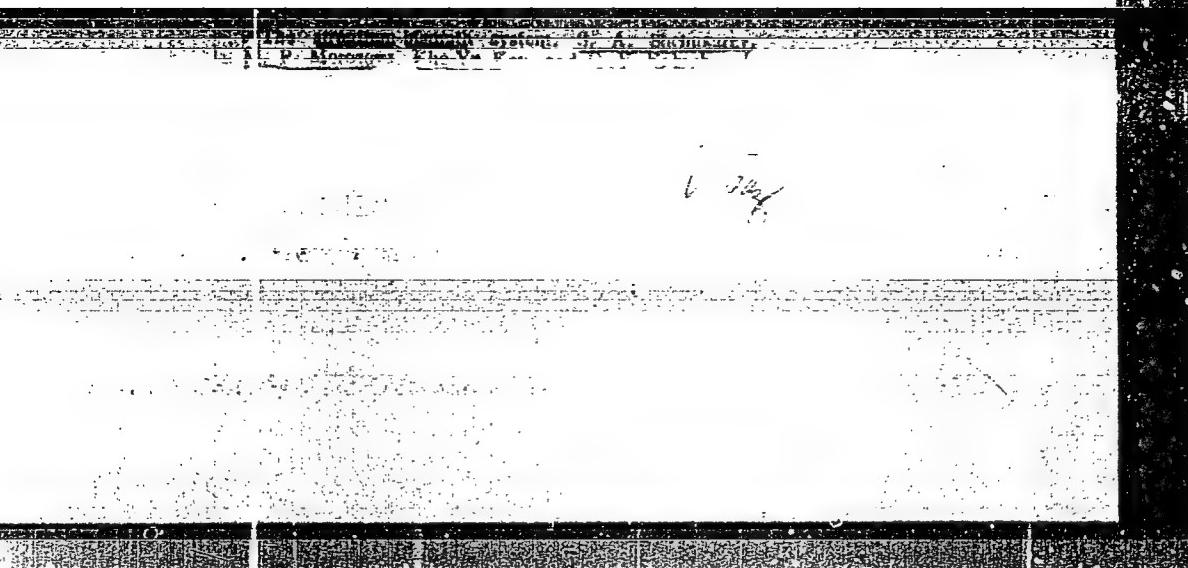
KOKOSH, G.V.

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

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CIA-RDP86-00513R000723710011-9"

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

Hiroshi Ochiai

* Correction for the negative branch of a thermocouple.

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

Kokosh G V.

57-1-1/30

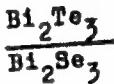
AUTHORS: Gordyakova, G. N., Kokosh, G. V.
Sinani, S. S.TITLE: The Investigation of Thermoelectrical Properties of
 $\text{Bi}_2\text{Te}_3 - \text{Bi}_2\text{Se}_3$ Solid Solutions (Izuchenie
termoolektricheskikh svoystv tverdykh rastvorov $\text{Bi}_2\text{Te}_3 -$
 Bi_2Se_3).PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1,
pp. 3-17 (USSR)ABSTRACT: The purpose of this work was to find new semiconductor
materials for thermocouples. As for the positive part of
the thermoelement the alloy of Sb_2Te_3 and Bi_2Te_3 is known as
the best at present, the authors tried to find a material
for its negative part. In this respect Bi_2Te_3 is already
of interest. First the electrical properties of alloys of the
 $\text{Bi}_2\text{Te}_3 - \text{Bi}_2\text{Se}_3$ -system without additions were investigated.
As basic material bismuth, tellurium and selenium were used.
The content of basic substance in them was ~ 99,97 %. The
predominant addition in bismuth was lead. The radiograms of
the investigated $\text{Bi}_2\text{Te}_3 - \text{Bi}_2\text{Se}_3$ alloy showed the formation

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The Investigation of Thermoelectrical Properties of
 $\text{Bi}_2\text{Te}_3 - \text{Bi}_2\text{Se}_3$ Solid Solutions

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solid solutions within the range of from 100 to 80% Mol
 Bi_2Te_3 and of from 70 to 100% Bi_2Se_3 . The radiogram were
taken by R. A. Zvinchuk in the A. M. Yelistratov laboratory.
The investigations for the electric conductivity and for the
thermo-e.m.f. (electromotive force) carried out according
to the compensation method show that the former gradually
decreases with its distance from the basic double compounds.
With a ratio close to one of



it is minimal. The thermo-e.m.f. curve of change shows the
course characteristic for solid solutions of substances with
carriers of two signs: starting from Bi_2Te_3 , the thermo e.m.f.
is positive and increase to an alloy of 20% Bi_2Se_3 , then
it decreases and changes the sign at $\sim 65\%$ Bi_2Te_3 , and
then stays negative to pure Bi_2Se_3 . The authors stated that
 Bi_2Te_3 -rich alloys transform the
 Bi_2Se_3 into electron-alloys.

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The Investigation of Thermoelectrical Properties of
 $\text{Bi}_2\text{Te}_3 - \text{Bi}_2\text{Se}_3$ Solid Solutions

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The further investigations concerned the effect of the additions on a 80 % Bi_2Te_3 and 20% Bi_2Se_3 containing solid solution. As additions served elements as well as compounds. The authors show that of the simple substances the elements of the 2nd, 3th, 4th, 5th and 8th group of the periodic system exercise an effect of acceptors, while halide, copper, silver, tellurium and selenium exercise that of donors. The alloys of the p-type are characterized by low movability values as well as by $\alpha^2\sigma$. The alloys of the n-type were obtained with sufficiently high indices for practical use. The best thermoelectrical properties were obtained with an addition of halides of the first group of the elementary system of with element-copper. The Z-values of the samples with optimal composition reached $2.5 \cdot 10^{-3}$ degree $^{-1}$. α = the thermo-e.m.f., γ = the thermal conductivity, $Z = \frac{\alpha^2\sigma}{\gamma}$. The investigation of the effect of compensated additions showed that the increase to be expected of a did not occur. With samples the same concentration of carriers,

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The Investigation of Thermoelectrical Properties of
 $\text{Bi}_2\text{Te}_3 - \text{Bi}_2\text{Se}_3$ Solid Solutions

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with or without compensation additions, the thermo-e.m.f.
remained practically the same.

The authors were advised by L. S. Stil'bans and A. V.
Ioffe submitted the data on the thermal conductivity of the
investigated solutions.

There are 14 figures, 4 tables, and 14 references, 9 of which
are Slavic.

ASSOCIATION: Institute for Semiconductors AN USSR, Leningrad (Institut
pochuprovodnikov AN SSSR Leningrad)

SUBMITTED: September 27, 1957

AVAILABLE: Library of Congress

Card 4/4

81626
S/181/60/002/06/14/050
B122/B063

24.760

AUTHORS: Kokosh, G. V., Sinani, S. S.

TITLE:

Thermoelectric Properties of Alloys of the Pseudobinary System $Sb_2Te_3 - Bi_2Te_3$

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1118 - 1124

TEXT: The present paper describes the effect of changes in concentration and various impurities of the system $Sb_2Te_3 - Bi_2Te_3$ upon its electrical conductivity σ and thermoelectromotive force a . The amount of the individual components of the specimens was systematically changed by a shift of the stoichiometry. A preliminary examination and a discussion of the Bi-Te and Sb-Te phase diagrams by means of data supplied by N. K. Abrikosov, L. V. Poretskaya, and I. V. Ivanova (Refs. 2 and 4) has shown that, besides Bi_2Te_3 , also $BiTe$, Bi_2Te , and $Bi_{14}Te_6$ may be present in the system Bi-Te. The two systems have some features in common but also characteristic differences. The two compounds crystallize out in the lattice with stoichiometric differences. The two compounds crystallize out in the lattice with stoichio-

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Thermoelectric Properties of Alloys of the
Pseudobinary System $Sb_2Te_3 - Bi_2Te_3$

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metrically insufficient quantities of Te, but this is more distinctly marked in the case of Sb_2Te_3 . Figs. 1 and 2 show the effect of annealing and pressing of the specimens on α and σ , depending on their concentration. Annealing for a long time (15 days) increased the p-type thermoelectromotive force of specimens enriched with Sb_2Te_3 , and the n-type thermoelectromotive force of specimens enriched with Bi_2Te_3 . The change in α at a ratio of $Bi_2Te_3 : Sb_2Te_3 = 2:1$ indicated the beginning of a reorientation in these specimens. Similar observations by S. V. Ayrapetyants and B. A. Yefimova (Ref. 5) are mentioned. The α -curves exhibited the mixed p- and n-type which is characteristic of solid solutions. In order to explain the considerable rise of α on long annealing, the authors examined the distribution curve of α at different compositions (Fig. 3) as well as the course of the α -curve with shifted stoichiometry as dependent on the admixtures of donors and acceptors (Fig. 4). It is assumed that tellurium penetrates into the lattice when the specimens are hot-pressed and especially when they are annealed. Though this also leads to a decrease in the hole concentration of the system enriched with Sb_2Te_3 , the p-type thermoelectromotive force

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Thermoelectric Properties of Alloys of the
Pseudobinary System $Sb_2Te_3 - Bi_2Te_3$

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nevertheless rises since Sb_2Te_3 has p-type conductivity, whereas the thermoelectromotive force already existing in the specimens enriched with Bi_2Te_3 is increased by the addition of electron-emitting Te. The thermoelectric properties of the system are obtained from Figs. 3 and 4 for any concentration ratio. Next, the authors examine the effect of impurities on the said properties of the system with a change in its composition. The authors performed three series of experiments using pure Bi and 1) Sb of the type Cy-0 (Su-0) with Te No. 2; 2) Sb: Cy-0 (Su-0), Te No. 3; 3) Sb: Cy-100 (Su-900), Te No. 1. Analytical data on substances obtained by D. M. Shvarts are listed in Tables 1 and 2. The negativity of α of the alloys in the region of 50 - 100 % Bi_2Te_3 increases with increasing purity.

The maximum of the positive α was shifted with increasing impurity concentration toward the side of higher Bi_2Te_3 content. The impurities increase their electrical conductivity. The maximum of the positive thermoelectromotive force could be increased when no impurities were added. As was shown by A. V. Ioffe, the parts with minimum heat conductivity and maximum α coincide (Fig. 8). There are 8 figures, 3 tables, and 5 references:

4 Soviet.
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X

Thermoelectric Properties of Alloys of the
Pseudobinary System $Sb_2Ta_3 - Bi_2Te_3$

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S/181/60/002/06/14/050
B122/B063

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad
(Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: November 3, 1959

Card 4/4

✓

MIKHAYLIK, P. (Sukhum); KIN, P. (Kiyev); KOKOSHA, A. (Dnepropetrovsk);
SOPOV, V. (Usa-Tobe, Alma-Atinskaya obl.); TSIRKUNOV, M. (Tselinnyy kray);
KHODIN, I. (Brestskaya obl.); MOS'PAN, G. (Lugansk); KHRAPYLINE, M.
(Novosibirsk)

About good people. Poch. delo 9 no. 3:29 Mr '63. (MIRA 16:4)
(Firemen)

KOKOSHA, V. P.

KOKOSHA, V. P.- "Investigation of the Working Process of a High-speed Piston Compressor of Low Capacity." Min of Higher Education USSR, Khar'kov Polytechnic Inst imeni V. I. Lenin, Khar'kov, 1955 (Dissertations For Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

KOKOSHA, V.P.; BUTKOVSKIY, V.V.

Multipoint measuring bridge for wire data recorders. Sber. trud.
Lab. prebl. bystr. mash. no.5:187-194 '55. (MLRA 9:2)
(Strains and stresses--Measurement) (Electric measurement(s))

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

RAZMADZE, A.N.; KOKOSHASHVILI, R.I.; MELASHVILI, Yu.K.; CHITAYSHVILI, Z.A.

New type of standardized single-circuit 110 kv overhead power
transmission line tower for mountainous areas. Trudy GPI [Gruz.]
no.1:153-159 '63.
(MIRA 18:2)

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

KOZLOV, Aleksey Yefremovich; RATOVSKIY, Pinkhus Mendelevich;
KOKOSHEV, Vasilii Grigor'yevich; PETROV, Georgiy
Yefremovich; POSTERNYAK, Ye.F., inzh., red.; TELYASHOV,
R.Kh., red.izd-va; GVIERTS, V.L., tekhn. red.

[New cutting-tool holding heads for lathes] Novye rezts-
dershatel'nye golovki k tokarnym stankam. Leningrad,
1963. 12 p. (Leningradskii dom nauchno-tehnicheskoi pro-
pagandy. Obmen peredovym opyтом. Seriia: Mekhanicheskaya
obrabotka metallov, no.15) (MIRA 17:1)

KOZLOV, Aleksey Yefimovich; KOKOSHEV, Vasiliy Grigor'yevich;
PETROV, Georgiy Yefimovich; RATOVSKIY, Petr Mikhaylovich;
KOGAN, I.L., red.

[Manufacture of diaphragms and bellows from beryllium
bronze] Izgotovlenie membran i sil'fonov iz berillievoy
bronzy. Leningrad, 1964. 17 p. (Leningradskii dom nauchno-
tekhnicheskoi propagandy. Obmen peredovym optyom. Seriia:
Goriachaya i kholodnaia obrabotka metallov davleniem, no.2)
(MIRA 17:7)

KOKOSHINSKAYA, V.I., dotsent; BOGACHEVA, V.S.

Hygienic properties of all-synthetic fabrics made from high-bulk polyacrylonitrile yarn. Tekst. prom. 25 no.5:13-15 My '65.
(MIRA 18:5)

1. Leningradskiy institut sovetskoy torgovli imeni F. Engel'sa
(for Kokoshinskaya). 2. Zaveduyushchiy laboratoriye fabriki
"Lensukno" (for Bogacheva).

CORELIK, I.M., kand.filolog.nauk; KOKOSHINSKAYA, V.I., kand.tekhn.nauk

Present-day textile terminology; discussion. Tekst.prom. 22
no.1:78-81 Ja '62. (MIRA 15:2)

1. Leningradskiy institut sovetskoy torgovli imeni F.Engel'sa.
(Textile fabrics--Terminology)

KOKOSHINSKAYA, V.I., kand.tekhn.nauk

Damages of jute and kenaf fibers caused by micro-organisms.
Izv.vys.ucheb.zav.; tekhn.leg.prom. no.5:40-47 '61. (MIRA 14:12)

1. Leningradskiy institut sovetskoy torgowli imeni Engel'sa.
Rekomendovana kafedroy tovarovedeniya promyshlennyykh tovarov.
(Textile fibers)
(Micro-organisms)

KOKOSHINSKAYA, V.I., kand.tekhn.nauk, starshiy nauchnyy sotrudnik

Quality of hemp ropes. Tekstil' prom. 23 no.5:50-52 My '83.
(MIRA 16:5)
1. Leningradskiy institut sovetskoy torgovli imeni Engel'sa (LIST).
(Rope—Testing)

KOKOSHINSKAYA, V.I., dotsent, kand. tekhn. nauk

Resistance of synthetic fibers to attack by micro-organisms.
Tekst. prom. 24 no.8:19-22 Ag '64. (MIRA 17:10)

1. Leningradskiy institut sovetskoy torgovli imeni V. Engel'sa.

KOKOSHINSKAYA, V.I., kand.tekhn.nauk, dotsent; SHMANEVA, R.N., kand.tekhn.
nauk, assistant; PEREPELKINA, M.D.; SHCHERBAKOVA, M.N.;
BOGACHEVA, V.S.

Properties of half-woolen nonwoven fabrics. Tekst.prom. 25
no.11:52-56 N '65.

(MIRA 18:12)

1. Kafedra tovarovedeniya promyshlennyykh tovarov Leningradskogo instituta sovetskoy torgovli imeni Engel'sa (for Kokoshinskaya).
2. Kafedra tovarovedeniya Leningradskogo instituta sovetskoy torgovli imeni Engel'sa (for Shmaneva). 3. Nachal'nik otdela netkanykh materialov Leningradskogo nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (for Perepelkina).
4. Rukovoditel' gruppy otdela netkanykh materialov Leningradskogo nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (for Shcherbakova). 5. Nachal'nik tekhnicheskogo otdela fabriki "Lensukno" Leningrad (for Bogacheva).

KOKOSHINSKIY, I.G.

3618. KOKOSHINSKIY, I.G. Bor'ba S. Prigoraniyem Porchinyevykh Kolyesh Dvigatelyey Tyatlovozov Tel I. Te 2. M., Transshyeldorisdat, 1954. 12s. S Chyert. 21sm (Vsesoyuz Nauchissled. In-t zh-D Transporta. Inform Pis'mo No. 317). 1,000eks. Byespl.-Na Obl. Avt. Nye Ukarany-(54-14151 sh) 621.431.72-242 + 621.887

SO: Knishnaya Letopis', Vol. 3, 1955

KOKOSHINSKIY, I.G.; TSAREVSKIY, V.A.; GRINKOV, K.A.

Controlling sticking of piston rings in the D50 engine. Trudy
TSMII MPS no 87:133-161 '54.
(MIRA 8:3)
(Diesel locomotives)

Kokoshinsky, I.G.

POYDA, Afanasy Arsent'yevich; KOKOSHINSKIY, Ivan Grigor'evich; GALANOVA,
M.S., inzh., red.; KHETOV, P.A., tekhn.red.

[Working principle and repair fo diesel locomotives] Ustroistvo i
remont teplovozov. Moskva, Gos.transp.zhel-dor. izd-vo. Pt.1.
[Diesels, auxiliary equipment and cars] Dizel', vspomogatel'noe
oborudovanie i ekipazh. 1957. 490 p. (MIRA 11:2)
(Diesel locomotives--Maintenance and repair)

PUTYANSKIY, N.A., doktor tekhn.nauk, prof.; GUREVICH, A.N., kand.tekhn.
nauk; KOKOSHINSKIY, I.G., kand.tekhn.nauk

Operation of fuel system components of diesel locomotive engines.
Elek. i tepl.tiaga 3 no.2:30-32 F '59. (MIRA 12:4)
(Diesel locomotives—Equipment and supplies)
(Fuel pumps)

KOKOSHINSKIY, I.G., kand.tekhn.nauk

Tightening of the sleeve linings of the 2D100 diesel engine. Trudy
TSNII MPS no.230:57-66 '62. (MIRA 15:7)
(Diesel locomotives) (Diesel engines)

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9

BABAYEV, N.K., inzh.; KOKOSHINSKIY, I.O., kand.tekhn.nauk

Restoration of tension in the bushings of the bearings of a diesel
engine. Elektr. tepl.tiaga 7 no.1:20-21 Ja '63. (MIRA 1612)
(Diesel locomotives)

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000723710011-9"

POYDA, A.A.; KOKOSHINSKIY, I.G.; TITOV, A.N., retsenzent; MOISEYEV,
G.A., retsenzent; KHARLANOV, P.G., retsenzent; KESAREV,
A.P., retsenzent; RUKAVISHNIKOV, Yu.A., retsenzent;
MEDVEDEV, G.G., retsenzent; PALKIN, A.P., retsenzent;
BOL'SHAKOV, A.S., retsenzent; KHITROVA, N.A., tekhn.red.

[Mechanical equipment of diesel locomotives] Mekhanicheskoe
oborudovanie teplovozov. Moakva, Transzheldorizdat, 1963.
463 p. (MIRA 17:2)

KOKOSHKA, V.

Forging .

Economizing metal in the forging shop. Za ekon. mat. No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

1. V. KOKOSHKA
 2. USSR (600)
 4. Automobile Industry
 7. How we fulfilled our socialist obligation. Za ekon. mat. no. 1. 1953.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. VISHTAK, S.; KOKOSHKA, V.
2. USSR (600)
4. Women as Farmers
7. Towards the sunny heights of communism. Mol. kolkh., 20, No. 1,
1953.

9. Monthly List of Russian Accessions, Library of Congress, _____ 1953, Uncl.

KOKOSHKA, Vasiliy, kuznets.

[Let's economize on metal] Ekonomika metall [Moskva] Profindat,
1953. 50 p. (MLRA 6:12)
(Automobile industry)
1. Moskovskiy avtomobil'nyy zavod imeni I.V.Stalina.

SHIVACHEVA, S.; STOYANOV, S.; KOLAROVA, D.; KOKOSHKAROVA, A.

Experience in preventing seizures in schizophrenia patients in remission. Zhur. nevr. i psikh. 65 no.8:1258-1265 '65.

(MIFA 18:8)

1. Psichiatriceskaya i laboratorno-eksperimental'naya sektsii Nauchno-issledovatel'skogo instituta nevrologii i psichiatrii (direktor - prof. G. Ganev) i kafedra psichiatrii (zaveduyushchiy - prof. Ye. Sharankov) Instituta spetsializatsii i usovershenstvovaniya vrachey, Sofiya.

KOKOSHKIN, A.A., inzhener.

Making reinforced concrete casings for electric power line poles.
Rats. i izobr. predl.v stroi. no. 120:29-31 '55. (MIRA 9:7)
(Electric lines--Poles) (Precast concrete)

ALEYNIKOV, G.I., kand. tekhn. nauk; ZENKEVICH, Yu.V., kand. tekhn. nauk;
GUREVICH, S.A., inzh.; KOKOSHKIN, I.A., inzh.

Results of thermochemical tests of the PK-12 boiler and of
observations on the water system of super-high parameter units
under operating conditions. Energomashinostronika 7 no.3:1-6
Mr. '61. (MIRA 16:8)

(Boilers—Testing)

KOKOSHIN, I. V.

USSR/Human and Animal Physiology - The Nervous System.

V-10

Abs Jour : Ref Zhur - Biol., No 2, 1958, 9056

Author : I.V. Kokoshkin

Inst : The Leningrad State Institute of Pediatrics.

Title : The Mechanism of Differentiation Inhibition and Conditioned Inhibition.

Orig Pub : Uch. zap. Leningr. gos. med. in-ta, 1956, 113, 101-116

Abstract : The production of conditioned inhibition in dogs was accomplished with much greater difficulty than the formation of differentiation, and the intensity of the inhibitory process was in this case considerably less. The basis of the mechanism of conditioned inhibition rests first on the synthesis of stimuli and then on their analysis. Differentiation inhibition begins immediately with an analysis of the stimulus. The alteration of conditioned

Card 1/2

KOKOSHIN, P.A., Cand Tech Sci -- (diss) "Investigation of
the basic elements and a method for the engineering calcu-
lation of rectifiers for wine-line units," Moscow, 1960, 15 pp
(Moscow Electrotechnical Institute of Communications) (KL, 34-60, 122)

KOKOSHKIN, P.A.

Rectifying equipment for the power supply of rural telephone
networks. Vest. sviazi 25 no.4:5-8 Ap '65.

(MIRA 18:6)

1. Nachal'nik energovotdela Tsentral'nogo konstruktorskogo byuro
Ministerstva svyazi SSSR.

KOKOSHKIN, P.A.

Dispatcher controlled signal system for postal processes at
large post offices. Vest. sviazi 21 no.4:26-28 Ap '61.
(MIRA 14:6)

1. Nachal'nik otdela energetiki Tsentral'nogo konstruktorskogo
byuro Ministerstva svyazi SSSR.
(Postal service--Intercommunication systems)

PHASE I BOOK EXPLOITATION SOV/4823

Kokoshkin, Pavel Aleksandrovich, and Lev Solomonovich Golubev

Novyye avtomatisirovannyye vyprysmitel'nyye ustroystva dlya elektropitaniya
apparatury provodnoy svyazi; informatsionnyy sbornik (New Automated Rectifier
Devices for the Power Supply of Wire-Communication Apparatus; Information
Handbook) Moscow, Svyaz'izdat, 1960. 73 p. (Series: Tekhnika svyazi)
12,500 copies printed. Errata slip inserted.

Sponsoring Agencies: Tekhnicheskoye upravleniye Ministerstva svyazi SSSR;
Tsentral'noye konstruktorskoye byuro Ministerstva svyazi SSSR.

Resp. Ed.: V.N. Kuleshov; Tech. Ed. S.F. Karabilova; Ed.: N.M. Kondrashina.

PURPOSE: This handbook is intended for technical personnel concerned with the
automation of the power supply in wire-communication apparatus.

COVERAGE: The handbook contains a short description of the designs and circuits
of the new automated VU rectifier devices developed by the Tsentral'noye
konstruktorskoye byuro Ministerstva svyazi SSSR (Central Design Office of the

Card 1/5

Card 2/5

KATARINOV, Ivan Alekseyevich; KOKOSHKIN, Pavel Aleksandrovich; KULESHOV,
V.N., chv.red.; KONDRAZHEVA, I.M., red.; MARCHUK, A.U., tekhn.red.

[Design of power supply devices for wire-communication enterprises]
Proektirovanie elektropitaiushchikh ustrojstv predpriatii pro-
vodnoi sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i
radio, 1960. 399 p.
(MIRA 14:3)

(Electric power supply for apparatus)
(Telegraph) (Telephone)

BOVKUN, Viktor Georgiyevich; KAZARINOV, Ivan Alekseyevich; KOKOSHKIN,
Pavel Aleksandrovich; LIUBSKIY, Gennadiy Severianovich; MEDOVÁR,
Anatoliy Isayevich; PETROV, Viktor Vasil'yevich; PIONTKOVSKIY,
Bronislav Aleksandrovich; SERYAKOV, Nikolay Ivanovich; ELINSON,
Mikhail Mikhaylovich; SERGEYCHUK, K.Ya., red.; GRIGOR'YEV, B.S.,
red.; FORTUSHENKO, A.D., red.; BUSANKINA, N.G., red.; SHEFER, G.I.,
tekhn. red.

[Engineering manual on electric communications; electric equipment]
Inzhenerno-tehnicheskii spravochnik po elektrosviazi;
elektrostanovki. Moscow, Gos. izd-vo lit-ry po voprosam sviazi
(MIRA 15:6)
i radio, 1962. 671 p.

(Telecommunication—Handbooks, manuals, etc.)

(Electric engineering—Handbooks, manuals, etc.)

S/137/62/000/002/057/14
A006/A101

AUTHOR: Kokoshkin, V. A.

TITLE: Quality control of the homogeneity of AlSb crystals

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 2, 1962, 38 - 39, abstract 20298. (V sb.: "Vopr. metallurgii i fiz. poluprovodnikov", Moscow, AN SSSR, 134 - 137)

TEXT: The author studied the non-homogeneous distribution of admixtures in AlSb n- and p-type crystals, containing according to data of spectral analyses Mg, Si, Fe, Cu, As, Au and Pb (about 10^{-4} % each) and alloyed with elements of groups II and VI of the periodic system. The study was made by means of 1) visual inspection of crystals for translucent depth with the aid of an infrared microscope sensitive to a wavelength range of $\leq 1.3 \mu$; 2) electrolytic deposition of Ag on the polished surface of the specimen; 3) etching of the specimens in a HCl-HNO₃ mixture; 4) observation of changes in volt-ampere characteristics and the thermo-emf sign of the metallic probe. Investigations by method 1 showed the monotonous change of general translucence over the ingot length, and also periodically located dark transverse bands. The frequency of the regular alternation

Card 1/2

S/509/62/000/011/006/019
E071/E351

AUTHORS: Kokoshkin, V.A. and Shen Tyan'- khuey
TITLE: Ohmic contacts for aluminum antimonide
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Trudy.
no. 11. Moscow, 1962. Metallurgiya, metallovedeniye,
fiziko-khimicheskiye metody issledovaniya. 109-113
TEXT: Two methods of metal deposition from solutions onto
a surface of aluminum antimonide, in order to produce ohmic
contacts, were investigated. Chemical deposition of nickel from
an aqueous solution, using sodium hyposulphite as the reducing
agent, gave the best results. Subsequent soldering of the usual
tin terminal permits the production of ohmic low-resistance p- and
n-type contacts for aluminum antimonide. The rectification appears
only on the contacts of a high-resistance material of the n-type,
or on a compensated material. Electrodeposition of the metal from
nonaqueous solutions was found to be less effective. Low-resistance
ohmic contacts were obtained only on a low-resistance material of
the p-type by electrodeposition of silver from silver nitrate
solutions in pyridine. Contacts suitable for the measurements of
Card 1/2

S/509/62/000/011/006/019
E071/E351

Ohmic contacts for

the specific resistance and of the Hall effect in aluminum antimonide of any resistance and any type of conductivity, at temperatures near the ambient, can be produced by either method. Nickel contacts with soldered tin terminals can be used for the above measurements over a wide temperature range and, in particular, at liquid-nitrogen temperatures. The difficulties of producing electric contacts on aluminum antimonide which are suitable for the above measurements are thought to be due to the presence of a hydroxide film, which is difficult to remove, and with the surface layers of the material itself (possibly the formation of double-charge layers). There are 1 figure and 1 table.

Card 2/2

S/509/62/000/011/007/019
E021/E351

AUTHOR: Kokoshkin, V.A.

TITLE: A method of measuring microhardness on anisotropic crystals

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Trudy. no. 11. Moscow, 1962. Metallurgiya, metallovedeniye, fiziko-khimicheskiye metody issledovaniya. 114 - 119

TEXT: The size and shape of indentations produced by a hardness test depend not only on the load but also on the distribution of the load in relation to the slip planes. Tips of special form have therefore been developed to enable the dimensions of the indentation to be related to definite crystal planes. It is, in fact, easier to correlate the dimensions with the slip planes as these planes play the main role in the development of deformation of anisotropic crystalline substances. Examples quoted are tips for use with face-centered cubic-lattice materials (many metals) and diamond-type lattice materials (semiconductors such as germanium and silicon). The dimensions of the tips for tests on the three basic crystallographic planes with the tip faces parallel

Card 1/2

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E021/E351

A method of

to the slip planes are:

Plane of measurement	no. of faces of pyramid	Angle between plane and face	Angle between opposite faces of pyramid
(100)	4	54°46'	70°28'
(110)	4	36°14'	109°32'
(111)	3	70°28'	-

The special tip shapes ensure the closest correspondence between the tip and the indentation. They also considerably diminish the errors of measurement due to distortion in shape of the indentation, crack formation, etc. and so increase the reproducibility of the method. The increased accuracy considerably widens the possibility of the method. In particular, it is possible to carry out a more detailed study of the anisotropy of crystalline substances compared with the conventional method. The possible application of the method to the investigation of the mechanical properties of single crystals with a low dislocation density merits special attention. There are 2 figures and 1 table.

Card 2/2

S/509/62/000/011/008/019
E021/2351

AUTHOR:

Kokoshkin, V.A.

TITLE:

Method of determining the crystallographic orientation of crystals from microhardness measurements

SOURCE:

Akademiya nauk SSSR. Institut metallurgii. Trudy. no. 11. Moscow, 1962. Metallurgiya, metallovedeniya, fiziko-khimicheskiye metody issledovaniya. 120 - 123

TEXT: It is known that during microhardness determinations of crystalline substances by slow indentation with a diamond pyramid the substance is plastically deformed. In general, the mechanical properties of crystals are anisotropic due to their crystalline anisotropy. Microhardness results thus depend, in general, on the shape of the diamond tip and on its orientation towards a given crystallographic plane of a substance. If the shape of the tip and its orientation on the crystal plane conform to the crystal lattice and the slip planes, the microhardness results are no longer fortuitous but definite. When the orientation of the crystal planes is unknown, the size and shape

Card 1/2

Method of determining ...

S/509/62/000/011/008/019
E021/E351

of the indentation obtained, using the same load at various angles of rotation of the tip about its axis, will depend on orientation. This provides a simple method for determining the crystallographic orientation using pyramid tips with shapes conforming to the crystal lattice and its slip planes. An example is given showing the current shapes of the tips used for a face-centered cubic lattice and a diamond-type lattice. The orientation of a known plane of any anisotropic crystal with sufficiently low symmetry of the lattice can be determined. The accuracy of the method decreases with increase in symmetry. It is shown that the orientation of an unknown plane can also be determined but only with limited accuracy. The orientation of a single crystal can thus be found by making indentations with the specially-shaped tips on three planes, two of which are formed by rotation of one about any axis lying in this plane at an angle of about 40° at one end the other side.

Card 2/2

Investigation of the kinetic characteristics of highly doped indium antimonide. V. A. Kokoshkin (10 minutes).

Synthesis, doping, and preparation of single crystals of gallium arsenide. A. P. Izergin, A. G. Grizor'yeva, V. N. Chernigovskaya, G. M. Ikonnikova.

Crystallization of gallium arsenide under different pressures of arsenic vapor. S. S. Khlobkov, V. A. Celivanova, G. M. Ikonnikova.

Influence of impurities on the electrical properties of gallium arsenide. M. A. Krivov, Ye. V. Malisova, C. V. Malyanov. (Presented by M. A. Krivov--15 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

L 21720-65 ENT(a)/EXP(t)/EXP(b)
BSD(t) EXP(t) JD
ACCESSION NR: AP4041358

IJP(c)/ASD(a)-5/AFIL/BSD/SSD/RAEM(a)/
8/0048/04/028/006/0980/0984

AUTHOR: Kokoshkin, V.A.

TITLE: Hole mobility in indium antimonide doped with zinc and cadmium Report,
Third All-Union Conference on Semiconductor Compounds held in Kishinev 16-21 Sep
1963

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no6. 1964, 980-984

TOPIC TAGS: semiconductor, semiconductor research, carrier mobility, indium anti-monide

ABSTRACT: Although hole mobility in InSb has been investigated by a number of authors (A.J.Strauss, J.Appl.Phys. 30, 559, 959; K.I.Vinogradova, V.V.Galavanov and D.N. Nasledov, Fiz.tverdogo tela 4, 1673, 1962 and others), the experimental results of these studies proved difficult to explain, the maximum acceptor impurity concentrations did not exceed $(1-5) \times 10^{18} \text{ cm}^{-3}$, and the specific nature of the impurities was not indicated. Yet concentration effects, above a certain critical impurity concentration, may be significant. Accordingly, it was deemed of interest to determine the variation of the Hall hole mobility in InSb with the impurity concentration in

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L 21720-65
ACCESSION NR: AP4041358

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the range of maximum amounts of impurities. This required a sensitive procedure and taking all possible measures to minimize chance errors. Hence in the present work there was investigated the mobility of holes in 126 different single crystal and polycrystalline specimens of InSb alloyed with zinc and cadmium in the concentration range from 3×10^{17} to $20 \times 10^{20} \text{ cm}^{-3}$ and the temperature range from 94 to 293°K. The rectangular bars were cut from ingots at right angles to the rolling axis; most of the single-crystal specimens were oriented so that the magnetic field was in the $\langle 111 \rangle$ direction. The specimens were rectangular about 1 mm thick and had a length to width ratio of at least 3. Ordinary Sn-Pb solder was used to provide the contacts. The estimate of accuracy in determining the mobility $u = R\sigma / (eV)$ (R is the Hall constant and σ is the conductivity) is 10-15%. The results are presented in the form of points in u versus Cd and Zn concentration coordinates and are compared with the theoretical curves, calculated on the basis of different effective mass and dielectric constant values. There is an appreciable scatter of the experimental points, particularly for the polycrystalline specimens. The agreement with theory for Zn doped crystals is reasonably good, but that for Cd doped InSb is poor. Possible reasons for the discrepancies are suggested and discussed. "In conclusion, I thank Prof. D.N. Nasledov and Senior Research Assistant M.S. Mirgalovskaya for their interest in the work and L.S. Bryzglav and N.S. Gertsen for assistance in performing the measurements."

Cord2/3

L 21720-65
ACCESSION NR: AP4041358

Orig.art.has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: SS,SM

NO REF Sov: 007

ENCL: 00

OTHER: 006

Card 3/3

L 44233-65 EMT(1)/T/SEC(b)-2 PL 4 LIP(c) 02

UR/0363/65/001/003/0340/0342

ACCESSION NR: AP5011928

AUTHOR: Mirolovskaia, N. S.; Kokoshkin, V. A.; Smirnov, V. Ya.

33

TITLE: Crystal face effect in doped indium antimonide

32

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1,
no. 3, 1965, 340-342TOPIC TAGS: indium antimonide, single crystal, doped semiconductor
crystal, single crystal growth, crystal face effect, impurity dis-
tribution

ABSTRACT: The face effect R in the $\langle 111 \rangle$ growth direction of indium antimonide single crystals doped with sulfur, selenium, or zinc has been studied in order to establish a correlation between R and the concentrations of the three impurities. R was defined as the ratio $K_a : K_b$, where K_a and K_b are the distribution coefficients "at the crystal face," i.e. in the central region of the crystal where an impurity incorporated by tangential growth of the face, and "beyond the face," i.e. in the peripheral region of normal incorporations of an impurity. The crystals were grown by the Czochralski technique

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L 44133-65

ACCESSION NR: AP5011928

under standard conditions. The average carrier (impurity) concentrations "beyond the face," (N_b), as determined from the experimental Hall constant at liquid nitrogen temperature, were in the $(1-4) \times 10^{17} \text{ cm}^{-3}$ range for Se and S and in the $(0.5-3) \times 10^{19} \text{ cm}^{-3}$ range for Zn. The $K_a : K_b$ ratio was assumed to be equal to the $(N_a : N_b)_a$ ratio, where N_a and N_b are the carrier concentrations "at" and "beyond the face" of preferential growth, and a is the moelectric power. The a values were measured by means of hot probe equidistant points along the diameters of polished cross sections cut from a single crystal. Thus, the ratios $a_b : a_a$ were established and $(N_a : N_b)_a$ ratios, i.e., R , were calculated on the basis of the $a(n)$ dependence established by calibration. The experimental $(N_a : N_b)_a$ data were found to be in good agreement with the previously published data for $R_{(111)}$. It was shown that: 1) R for a given impurity varied significantly along the entire length of the crystal as the average impurity concentration increased or decreased even slightly; and 2) for impurities with $K_a < K_b$, R decreased and for impurities with $K_a > K_b$, R was nearly constant with increasing N_b with the concentration limit of N_b (orig. ref. has $N_b = 10^{19} \text{ cm}^{-3}$).

Card 2/3

L 44153-65

ACCESSION NR: AP5011928

... Institut metallurgii im. A. A. Baykova (Institut für
Metallurgie) ...

SUBMITTED: 20Sep64

ENCL: 00

SUB CODE: SS

NO REF Sov: 005

OTHER: 004:

ATD PRESS: 3246

Card 3/3

L 58713-65 EMT(1)/T/EEC(b)-2 PI-4 IJP(c) OO

ACCESSION NR. AP5010591

JR/0363/85/001/005/0668/0874

46.682'861-162.2

AUTHORS: Kokoshkin, V. A.; Mirgalovskaya, M. S.; Bezborodova, V. M.

TITLE: The degree of homogeneity of doped indium antimonide crystals

SOURCE: AN SSSR. Izvestiya. Neorgan cheskije materialy, v. 1, no. 5, 1965, 668-674

TOPIC TAGS: indium antimonide, crystal growth, zinc doping, cadmium doping, thermo-electromotive force, Hall mobility

ABSTRACT: By using the method of thermo-emf measurements, the authors attempted to determine the inhomogeneities which may arise in indium antimonide crystals doped with acceptor impurities. It was found that indium antimonide ingots doped with zinc as well as cadmium up to concentrations of $4 \times 10^{17} - 2 \times 10^{18} \text{ cm}^{-3}$, prepared by the Czochralski method at $v = (0.7-1.3) \text{ cm/sec}$ and $n_1 = 0.8-1 \text{ rps}$, may have appreciable inhomogeneities in the longitudinal and transverse distribution of the impurity. Variations in the distribution of the thermo-emf may reach + 20% in some parts of the ingots. Doping with zinc produces a more homogeneous material. An ingot containing zinc is relatively homogeneous over most of its body, and the variations in distribution are + (4-5)%. The nonuniform layered trapping of zinc and cadmium during crystallization is primarily

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L 58713-65

ACCESSION NR: AP5016581

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helical in character, and is determined by the conditions of growth. A 50-100% increase in growth rate (to 1.3×10^{-5} m/sec) impairs the homogeneity of the ingots. The obstacles significantly affect the Hall mobility. A definite correlation was observed between the change in the degree of homogeneity of the ingots and a concentration of 10^{18} cm^{-3} and the deviation of the experimental value of the Hall mobility from the calculated value. The authors thank V. V. Kuznetsov and I. S. Bravzgalov for assistance in the experimental work." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 27Mar84 ENCL: 00

SUB CODE: IC

NO REF Sov: 008 OTHER: 008

dm
Card 2/2

ACCESSION NR.: AP5009917

UR/0032/65/031/004/0461/0463

AUTHOR: Kokoshkin, V. A.

TITLE: Investigating the uniformity of highly alloyed semiconductors with the help of a heated thermocouple probe

SOURCE: Zavodskaya laboratoriya, v. 31, no. 4, 1965, 461-463

TOPIC TAGS: thermoelectricity, semiconductor, thermocouple, indium antimonide /
thermometer, K21/4 galvanometer

The method of measuring thermoelectromotive force (TEF) with a probe heated by the current is applied to the investigation of the uniformity of highly alloyed semiconductors with the help of a heated thermocouple probe.

The probe, specimen and probe holder are heated by boron carbide. The probe is heated by the current of 100 mA which the cold probe is connected to the galvanometer.

For force pressing the probe against the specimen, copper-constantan thermocouples are used. The thermocouple leads

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pass through double ceramic tubes 8 which maintain a constant temperature provided by heater 9. The hood 10 diminishes the air convection. The specimen thermocouples are protected by a copper tube 11 which absorbs 12 heat to stabilize the contacts. Temperatures and heat were measured with a three-potentiometer and a M21/4 galvanometer. Results obtained in investigating -type InSb are plotted on Fig. 2 on the Enclosure. Here the ordinate values indicate the temperatures on the surface of the specimen in relation to the hot probe temperature (taken as a unity), and distances between the probes are shown as the abscissa values. The most indicative results are obtained when the surface is etched. The readings are not affected by a change in the material of the platform, but show substantial irregularity when the probe is placed at the boundary of a crystalline grain. Orig. art. has: 3 figures.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 00

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